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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,419	07/29/2002	Roger J. Westcott	1832	5115
7590	04/05/2005		EXAMINER	
Karen G Kaiser National Starch & Chemical Company Box 6500 Bridgewater, NJ 08807-0500			MAIER, LEIGH C	
			ART UNIT	PAPER NUMBER
			1623	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/088,419	WESTCOTT ET AL.	
	Examiner	Art Unit	
	Leigh C. Maier	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 February 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-8,12-21,26-35,40-42,44-47,49-52,54,71,74 and 80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8,12-21,26-35,40-42,44-47,49-52,54,71,74 and 80 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 11, 2004 has been entered.

Claims 1-8, 12-21, 26-35, 40-42, 44-47, 49-52, 54, 71, 74, 75, and 80 are pending. It is noted that in the latest claim listing, the first page recites "Amend claims 40, 44, and 49." However, these claims are designated as "previously amended" and there is no apparent amendment.

Any rejection or objection not expressly repeated has been withdrawn. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Information Disclosure Statement

It is noted that Applicant submitted a number of references to support the argument that "potato" should be considered a patentable limitation in the term "potato starch." (See discussion below.) These references have not been made of record because (1) they were not properly listed on a form PTO-1449 and (2) they were either incomplete (Ong et al and Tang et al) or the facsimile copy was illegible (both Thomas & Atwell references).

Claim Rejections - 35 USC § 112

Claims 1-8, 12-21, 26-35, 40-42, 44-47, 49-52, 54, 71, 74, 75, and 80 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

All the claims are drawn to a “potato starch” with various physico-chemical limitations. In response to a previous Office action, Applicant contends that the modifier “potato” in the term “potato starch” should be considered to be a patentable limitation. Applicant argues that there are a number of properties that specific to “potato starch.” Applicant invokes phosphate content, molecular weight of amylose, lipid/protein content, and granule size. For example, Applicant states that potato starch has a significant phosphate content, whereas there is no significant phosphate in corn, wheat or quinoa. While these observations may be true for “typical” wild-type starches, the examiner would point out that the “typical” wild-type potato starch has an amylose content of about 20% (not less than 8% - see claim 49) and does not have good freeze-thaw stability as in the instant invention.

Applicant appears to be depending on inherent properties of “typical” potato starch to differentiate the inventive starch from other starches having the recited properties but derived from other sources, while on the other hand, differentiating said starch from other potato starches on the basis of properties that differ from those of “typical” potato starches. However, it cannot be determined which of “typical” but unstated properties are required. Furthermore, it is not clear which of these unstated “typical” properties actually resides in the instant starch. For example, the inventive starch is prepared by inhibiting expression of at least one of SSII or SSIII, but

Landschutze (Pflanzenschutz-Nachrichten, 2004) teaches that inhibition of these enzymes results in decrease in phosphate content in the starch that is produced. See page 97, section 5.

It is known that (as in the instant case) properties of starch may be manipulated through genetic transformations. See, for example KOSSMANN et al (US 6,207,880) at col 8, lines 30-42. This reference discusses transforming cells, so that they produce starch with a decreased phosphate content. If a starch with little to no phosphate were produced in a potato, would it be considered a “potato starch”?

For the ongoing reasons, one of ordinary skill would not be apprised of the metes and bounds of the claims. Thus, the claims are rendered vague and indefinite.

Further regarding claims 40-42, claim 40 recites “a ratio of fraction I to fraction II short chain glucans of at least 60%.” First of all, “short” is a relative term. Secondly, ratios are typically stated in terms of one value relative to another and not as a percentage. It is not clear if this means that (1) $(\text{fraction I})/(\text{fraction II}) = 0.6$ (60%); (2) $(\text{fraction I})/(\text{fraction I} + \text{fraction II}) = 0.6$ (60%) (3) the ratio of fraction I:fraction II is 0.6:1; (4) the ratio of fraction I:fraction II is 1:0.6; (5) something else.

Further regarding claim 71, the claim depends from claim 65, which has been canceled. The claim is thus rendered vague and indefinite.

Notes on Claim Interpretation

Applicant has argued that the instant starch would be distinct from other starch products having the physical properties recited in the claims based on supposedly inherent, but unstated and undescribed, physical properties. However, as discussed above, this argument renders the

Art Unit: 1623

claims vague and indefinite. The claims, as stated, appear to be quasi product-by-process claims. As such, without further description of the required properties of the instant starch, the examiner must rely on the limitations that are actually stated in the claims to determine patentability because the patentability in such instances depends on the product, *per se*, not necessarily the process by which it was prepared.

Claims 40-42 are discussed above. It does not appear that the terms “fraction I” and “fraction II” are art-recognized terms with specific meanings, and there is no particular definition disclosed in the specification. From how it is determined in the specification, these fractions are interpreted to refer to, in a starch having a polymodal (at least bimodal) molecular weight distribution, the first two lowest molecular weight fractions that elute from a GPC column.

Claim Rejections - 35 USC § 102

Claims 1-8, 12-21, 26-35, 40-42, 44-47, 49-52, 54, 71, and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by AHAMED et al (Carbohyd. Polym., 1999).

AHAMED teaches starch which reasonably appears to be within the scope of the claims as set forth in previous Office actions. Since the Office does not have the facilities for preparing the claimed materials and comparing them with prior art inventions, the burden is on Applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

Claims 1-8, 12-21, 26-35, 40-42, 44-47, 49-52, 54, 71, 74, 75, and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by WURZBURG et al (US 4,428,972).

WURZBURG teaches starch which reasonably appears to be within the scope of the claims as set forth in previous Office actions. See discussion of *In re Best* and *In re Fitzgerald*.

Claims 1-8, 12-21, 26-35, 40-42, 44-47, 49-52, 54, 71, and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by YASUI et al (US 4,428,972).

YASUI teaches starch which reasonably appears to be within the scope of the claims as set forth in previous Office actions. See discussion of *In re Best* and *In re Fitzgerald*.

Claims 1-8, 12-21, 26-35, 40-42, 44-47, 49-52, 54, 71, and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by VISSER et al (Mol. Gen. Genet., 1991).

VISSER teaches potato starch devoid of or greatly reduced in amylose content. See abstract and Table 3. This product is one that reasonably appears to be within the scope of the claims as set forth in previous Office actions. See discussion of *In re Best* and *In re Fitzgerald*.

Claims 1-8, 12-21, 26-35, 40-42, 44-47, 49-52, 54, 71, and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by HOFVANDER et al (WO 92/11376).

HOFVANDER teaches potato starch devoid of or greatly reduced in amylose content. See abstract and paragraph bridging pages 5 and 6. This product is one that reasonably appears to be within the scope of the claims as set forth in previous Office actions. See discussion of *In re Best* and *In re Fitzgerald*.

Claim Rejections - 35 USC § 103

Claims 1-8, 12-21, 26-35, 40-42, 44-47, 49-52, 54, 71, 74, 75, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of (1) VISSER et al (Mol. Gen. Genet., 1991) in view of HUIZENGA et al (EP 799837) or (2) HOFVANDER et al (WO 92/11376) in view of HUIZENGA et al (EP 799837).

VISSER teaches as set forth above. The reference does not teach the compositions recited in claims 75 or 80.

HOFVANDER teaches as set forth above. The reference does not teach the compositions recited in claims 75 or 80.

HUIZENGA teaches the use of amylopectin potato starch in compositions for the preparation of food, pharmaceutical products, adhesives, etc.—typical uses for starches, known in the art. See page 2, lines 3-13.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to prepare compositions as described by HUIZENGA using the amylopectin potato starch described by either of VISSER or HOFVANDER being motivated by the express suggestion in HUIZENGA to do so for the art-disclosed utilities. One of ordinary skill would reasonably expect success in such an undertaking.

Art Unit: 1623

Examiner's hours, phone & fax numbers

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh Maier whose telephone number is (571) 272-0656. The examiner can normally be reached on Tuesday, Thursday, and Friday 7:00 to 3:30 (ET).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson (571) 272-0661, may be contacted. The fax number for Group 1600, Art Unit 1623 is (703) 872-9306.

Visit the U.S. PTO's site on the World Wide Web at <http://www.uspto.gov>. This site contains lots of valuable information including the latest PTO fees, downloadable forms, basic search capabilities and much more.



Leigh C. Maier
Primary Examiner
April 1, 2005